WHAT IS CLAIMED IS:

1. A formulation of thermostable DNA polymerases comprising at least one thermostable DNA polymerase lacking 3'-5' exonuclease activity and at least one thermostable DNA polymerase exhibiting 3'-5' exonuclease activity.

2. A kit for the synthesis of a polynucleotide, said kit comprising a first DNA polymerase, wherein said first polymerase possesses 3'-5' exonuclease activity and a second DNA polymerase, wherein said second polymerase lacks 3'-5' exonuclease activity.

3. A kit for the synthesis of a polynucleotide, said kit comprising:

(a) a first DNA polymerase, wherein said first polymerase possesses 3'-5' exonuclease activity selected from the group consisting of Pyrococcus furiosus DNA polymerase, Thermotoga maritima DNA polymerase, Thermococcus litoralis DNA polymerase, and Pyrococus GB-D DNA polymerase, and

(b) a second DNA polymerase, wherein said second polymerase lacks 3'-5' exonuclease activity selected from the group consisting of Thermus aquaticus DNA polymerase, (exo-) Thermococcus literalis DNA polymerase, (exo-) Pyrococcus furiosus DNA polymerase, and (exo-) Pyrococcus GB-D DNA polymerase.

4. A kit according to claim 3, wherein said first and second DNA polymerases are thermostable.

5. A method of amplifying a polynucleotide sequence, said method comprising: the steps of mixing a composition with a synthesis primer, and a synthesis template, said composition comprising a first DNA polymerase possessing 3'-5' exonuclease activity, and a second DNA polymerase, wherein said polymerase

lacks 3'-5 exonuclease activity.

6. A method of amplifying a polynucleotide sequence, said method comprising: the steps of mixing a composition with a synthesis primer, and a synthesis template, said composition comprising

(a) a first polymerase possessing 3'-5' exonuclease activity selected from the group consisting of Pyrococcus furiosus DNA polymerase, Thermotoga maritima DNA polymerase, Thermococcus litoralis DNA polymerase, and Pyrococcus GB-D DNA polymerase, and

(b) a second DNA polymerase, wherein said polymerase lacks 3'5 exonuclease activity selected from the group consisting of Thermus aquaticus DNA polymerase, (exo-) Thermococcus litoralis DNA polymerase, (exo-) Pyrococcus furiosus DNA polymerase, and (exo-) Pyrococcus GB-D DNA polymerase.

7. A method according to claim 6 wherein said first and second DNA polymerases are thermostable.

8. A method according to claim 6, wherein said first DNA polymerase is Pyrococcus furiosus DNA polymerase.

9. A method according to claim 7, wherein said second DNA polymerase is Thermus aquaticus DNA polymerase.

10. A method according to claim 8, wherein said second DNA polymerase is Thermus aquaticus DNA polymerase.

11. A kit according to claim 4, wherein said first DNA polymerase is Pyrococcus furiosus DNA polymerase.

12. A kit according to claim 4, wherein said second DNA

polymerase is *Thermus aquaticus* DNA polymerase.

13. A kit according to claim 11, wherein said second DNA polymerase is *Thermus aquaticus* DNA polymerase.

14. A kit according to claim 3, said kit further comprising DNA primers.

15. A kit according to claim 4, said kit further comprising DNA primers.

16. A kit according to claim 13, said kit further comprising DNA primers.